

HP Labs - Imaging Technology Dept

Invention Disclosure Cover Sheet

Which target(s) does this invention support?

(Check any that apply)

Yes

(1) Image Processing

- Copy pipeline
- Text Enhancements
- Page Segmentation
- Half-Tone Removal
- E-signature
- Embedded information

✓ • Others: image display

(2) Multimedia Management

- Music classification
- Corner detection etc.
- Others:

(3) Compression and Digital Video

- CAST
- Grafit
- JADE
- Others (please add):

(3) Compression and Digital Video

-
- Others (please add):

OTHER ??

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INVENTION DISCLOSURE

PAGE ONE OF

PDNO

10006288

DATE RCVD



ATTORNEY

SEH

Instructions: The information contained in this document is **COMPANY CONFIDENTIAL** and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

Descriptive Title of Invention:

photo quality meter

Name of Project:

N/A

Product Name or Number:

N/A

Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s):

No

Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, the date(s) and location(s):

No

Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s):

No

If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-888-4919 or 870-898-4919.

Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.)

No

Was the invention built or tested? If so, the date:

No

Was this invention made under a government contract? If so, the agency and contract number:

No


Description of Invention: Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).

- A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)
- B. Advantages of the invention over what has been done before.
- C. Problems solved by the invention.
- D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).

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Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [

].

Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
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Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name

(If more than four inventors, include additional information on another copy of this form and attach to this document)

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INVENTION DISCLOSURE		COMPANY CONFIDENTIAL	PAGE ____ OF ____
Signature of Witness(es): (Please try to obtain the signature of the person(s) to whom invention was first disclosed.)			
The invention was first explained to, and understood by, me (us) on this date: []			
Full Name	Signature	Date of Signature	
AMIR SAID			
Full Name	Signature	Date of Signature	

Inventor & Home Address Information: (If more than four inventors, include addl. information on a copy of this form & attach to this document)			
Inventor's Full Name			
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Do you have a Residential P.O. Address? P.O. BOX	City	State	Zip
Greeted as (nickname, middle name, etc.)	Citizenship		
Qian	USA		

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The camera
For each photo captured by a digital camera, it will calculate a photo quality number that consist of the following components: sharpness (whether the photo is blurry); composition (whether the main object of the photo follows composition rules in photography); color (whether there is large saturated region or significant color cast); red eye or closed eye, noisy^{level} (due low light, eg.)

B. Advantages of the invention over what has been done before.

Currently, there is no photo quality number associated with a digital photo. One needs to view a large screen image to determine whether the captured image is good or not. This can be slow in a PC (a thumbnail sheets is much faster than one-by-one examination), or impossible on a small LCD screen. The photo quality meter will give the camera user instant feedback on

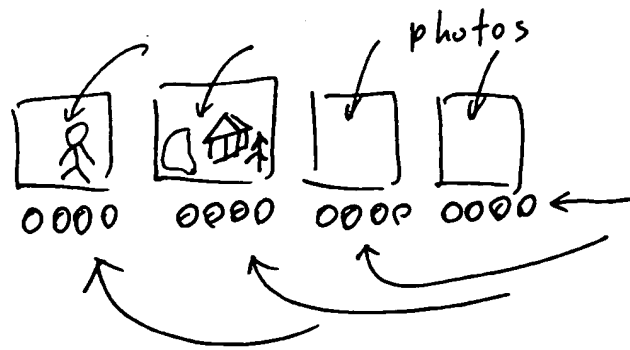
C. Problems solved by the invention.

how good the photo is.
The photo quality meter can give users instant feedback on how good their captured photos are so that they can make quick decisions (e.g. delete and retake, keep, print, send to photo-sharing web site). They don't have to wait until downloading the photos to a large - screen monitor to examine closely.
PC with

D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).

There are a lot of image quality studies published in literature. But they are used by researchers and designers, and are not calculated on each captured photo and presented to consumers. A camera with built-in photo quality meter can help consumers make better decisions about their captures (e.g. delete and re-take, or keep).

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Color or intensity
coded indicators
on how good the photo
is in terms of sharpness,
noise level, composition,
etc.